Dual Band 802.11ax 1800Mbps Outdoor Wireless AP

Super High Speed and Wide Coverage

PLANET WDAP-1800AX **1800Mbps Dual Band 802.11ax Wireless AP**, supporting **MU-MIMO**, **Wave 2.0, OFDMA**, **Seamless Roaming**, **Beamforming and BSS Coloring technology**, provides a maximum wireless speed of 1200Mbps in the 5GHz band and 600Mbps in the 2.4GHz band. It comes with the **IP67-rated aluminum** case protected from contact with harmful dust and water. By connecting high-gain antenna through the flexible **N-type** connectors, the system integrator can easily assist customers in achieving various outdoor long-distance applications under rough weather in any harsh environment. The WDAP-1800AX also offers the **20KV surge protection** for wire cable interface that can greatly improve the durability of the product.

Benefits of MU-MIMO, Wave 2, OFDMA, Seamless Roaming, Beamforming and BSS Coloring

The WDAP-1800AX can be installed in public areas such as hotspots, airports and conferences as OFDMA, a multi-user version of OFDM, enables the concurrent AP to communicate (uplink and downlink) with multiple clients by assigning subsets of subcarriers called resource units (RUs) to the individual clients. With MU-MIMO and Seamless Roaming technologies, it provides a better Wi-Fi user experience, reducing the likelihood of users turning off Wi-Fi and putting more load on the cellular network. Beamforming is to improve your Wi-Fi signal when you are far away from your router. The BSS color is a numerical identifier of the BSS. 802.11ax radios that are able to differentiate between BSSs using BSS color identifier when other radios transmit on the same channel.

Industrial Wireless LAN and LAN

- Compliant with the IEEE 802.11a/b/g/n/ac/ax wireless technology
- 802.11ax 2T2R architecture with data rate of up to 1800Mbps (600Mbps in 2.4GHz and 1200Mbps in 5GHz)
- Equipped with 10/100/1000Mbps RJ45 port with auto MDI/MDI-X supported
- One reset button and power LED indicator

RF Interface Characteristics

- Built-in four N-type antenna connectors
- High output power with multiply-adjustable transmit power control

Outdoor Environmental Characteristics

- IP67 rating, IEEE 802.3at PoE design
- Rugged protection with aluminum extrusion case and ground terminal
- 20KV surge protection for wire cable interface
- Operating temperature: -40~70 degrees C

Multiple Operation Modes and Wireless Features

- Multiple operation modes: AP, gateway and repeater
- Supports OFDMA (orthogonal frequency division multiple access)
- Supports MU-MIMO (multi-user multiple-input multiple-output), Wave 2.0, Beamforming and BSS Coloring
- WMM (Wi-Fi multimedia) provides higher priority to multimedia transmitting over wireless
- Coverage threshold to limit the weak signal of clients occupying session
- Real-time Wi-Fi channel analysis chart and client limit control for better performance
- Support Terminal Seamless Roaming with 802.11k, 802.11v, and 802.11r

■ OFDMA (Orthogonal Frequency Division Multiple Access) Benefits

- Helps transmit small and large packets together to reduce bandwidth burden and improve data transmission performance

- Transmitting data at the same time can effectively reduce the transmission delay for longer frame and low-speed transmission.

- Improves the overall traffic quality, and effectively uses bandwidth in an environment where multiple people use the Internet.

- Increases the number of devices that can be connected to the AP.

- Reduces the power consumption of the device by way of the use of low bandwidth.

A **75%** Reduction in Delays

OFDM

Time

Streaming   Web page   Media

OFDMA
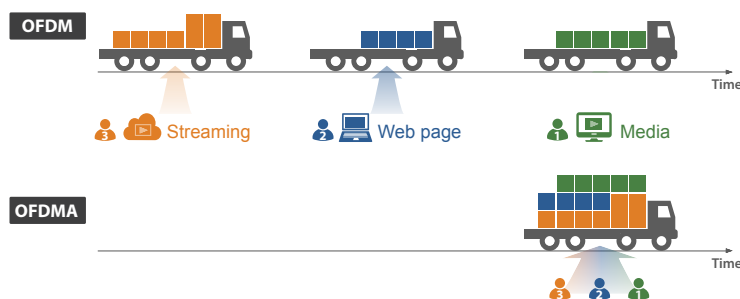
Time

WAVE 1
SU-MIMO
Serving one user at a time

WAVE 2
MU-MIMO
Serving multiple users simultaneously

■ Beamforming

Beamforming is to improve your Wi-Fi signal when you are far away from your router. When you use beamforming, Wi-Fi beamforming narrows the focus of that router signal, sending it directly to your devices in a straight line, thus minimizing surrounding signal interference and increasing the strength of the signal that ultimately bring you the following benefits:

- Extend your Wi-Fi coverage
- Deliver a more stable Wi-Fi connection
- Deliver better Wi-Fi throughput
- Reduce router interference

Secure Network Connection

• Full encryption supported: WPA3 Personal, WPA2/ WPA3 Personal, WPA2 Personal (AES) ,WPA2 Personal (TKIP),WPA2 Personal (TKIP+AES),WPA/WPA2 Personal (AES) ,WPA/WPA2 Personal (TKIP) , WPA/WPA2 Personal (TKIP+AES) , WPA2 Enterprise, WPA/WPA2 Enterprise

• Supports 802.1Q port VLAN Supports IP/Port/MAC address/ URL filtering, DoS, SPI firewall

• Supports DMZ and port forwarding

• Bandwidth control per IP address to increase network stability

Easy Deployment and Management

• Supports PLANET AP Controllers in AP mode

• Easy discovery by PLANET Smart Discovery

• Self-healing mechanism through system auto reboot setting

• System status monitoring through remote syslog server

• Gateway mode supports PLANET DDNS/Easy DDNS, Captive Portal, RADIUS Server/Client

Dedicated and stable signals   Signal loss
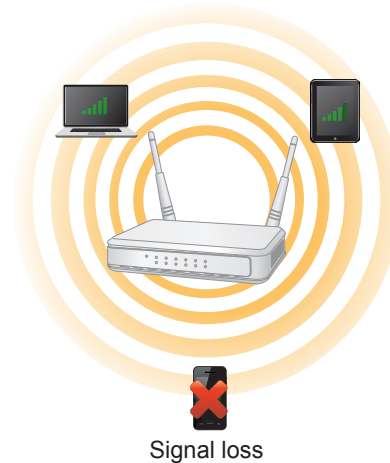
BSS Coloring

The BSS color is a numerical identifier of the BSS. 802.11ax radios that are able to differentiate between BSSs using BSS color identifier when other radios transmit on the same channel. If the color is the same, this is considered to be an intra-BSS frame transmission. In other words, the transmitting radio belongs to the same BSS as the receiver. If the detected frame has a different BSS color from its own, then the STA considers that frame as an inter-BSS frame from an overlapping BSS.
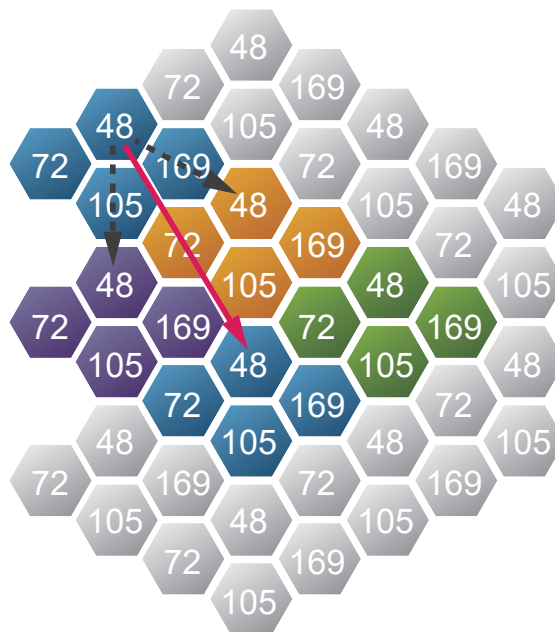
WPA3 Next Generation Security for Your WLAN Solution

WPA3 is the next generation Wi-Fi security technology that provides the most advanced security protocol to the market. WPA3 makes your connection more secure by preventing hackers from easily cracking your password no matter how simplified the password is. WPA3 can also provide more reliable password-based authentication, so it can better protect the security of individual users.
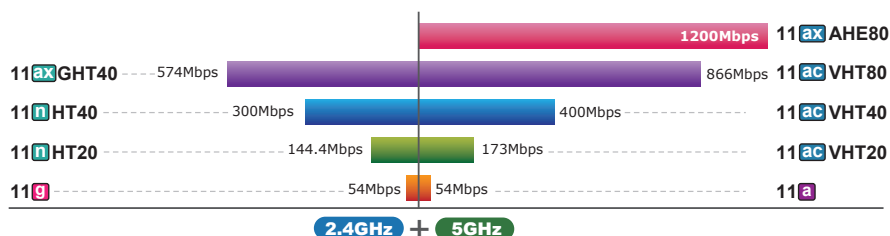
* WDAP-1800AX only supports WPA3-Personal.

Super Power Dual Band WLAN Solution

PLANET WDAP-1800AX, adopting the IEEE 802.11ax Wi-Fi 6 standard, provides a high-speed transmission. The maximum wireless speed in 2.4GHz band is up to 11AX of 574Mbps, and in the 5GHz band is up to 11AX of 1201Mbps. Both the **2.4GHz and 5GHz** wireless connections can also be used simultaneously.

Faster Data Rate than That of 11ac by **37%**

	2.4GHz	5GHz	
11ax GHT40	574Mbps	1200Mbps	11ax AHE80
		866Mbps	11ac VHT80
11n HT40	300Mbps	400Mbps	11ac VHT40
11n HT20	144.4Mbps	173Mbps	11ac VHT20
11g	54Mbps	54Mbps	11a

2.4GHz + 5GHz

Data Transmission Rates *1800Mbps*

Advanced Security and Rigorous Authentication

The WDAP-1800AX supports WPA/WPA2/WPA3 wireless encryptions, and also supports the WPA2 Enterprise, WPA/WPA2 Enterprise, which can effectively prevent eavesdropping by unauthorized users or bandwidth occupied by unauthenticated wireless access. Furthermore, any users are granted or denied access to the wireless LAN network based on the ACL (Access Control List) that the administrator pre-established.

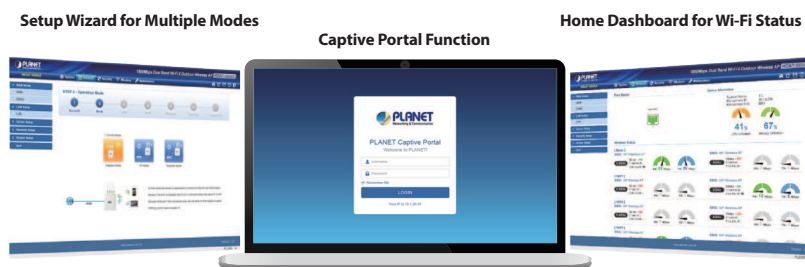## Flexible, Durable and Reliable Outdoor Characteristics

To reach maximum reliability in the harsh environment, the **WDAP-1800AX** comes with **IP67-rated Aluminum Die-cast Housing**, capable of withstanding wide temperature ranging from **-40 to 70** degrees C. Designed with the **IEEE 802.3at PoE+** (**P**ower **o**ver **E**thernet) power scheme, the **WDAP-1800AX** can be easily installed in the areas where power outlets are not available. Furthermore, it is also suitable to be integrated with PLANET Renewable Power PoE System to offer farther wireless service in remote areas.

Dust-proof — Water-proof — Surge-proof — Frost-proof — Overheat-proof

Environmental Adaptations in Outdoor Area

Optimized Efficiency in AP Management

The brand-new GUI configuration wizard helps the system administrator easily set up the WDAP-1800AX step by step. Besides, the built-in Wi-Fi analyzer provides real-time channel utilization to prevent channel overlapping to assure greater performance. With the automatic transmission power mechanism, distance control and scheduling reboot setting, the WDAP-1800AX is easy for the administrator to deploy and manage without on-site maintenance. Moreover, you can use PLANET NMS-500 or NMS-1000V AP control function to deliver wireless profiles to multiple APs simultaneously, thus making the central management simple.

Setup Wizard for Multiple Modes — **Captive Portal Function** — **Home Dashboard for Wi-Fi Status**

Applications

Robust Hardware and Flexible Dual RF for Various Outdoor Requirements

With high-power, long-distance, reliable and comprehensive characteristics, the WDAP-1800AX designed with durable and robust IP67 hardware architecture, and dramatic wireless efficiency is perfect for any outdoor network infrastructure. With higher gain antennas and dual RF design, the WDAP-1800AX is suitable for various applications. For example, the WDAP-1800AX can establish the backhaul link through the 5GHz radio and then relay the wireless signal through the 2.4GHz radio to provide internet service to rural residents. With the WDAP-1800AX, an outdoor wireless infrastructure in the harsh environment can be speedily deployed to reduce cabling cost and installation time.

Flexible Deployment with Various Antennas
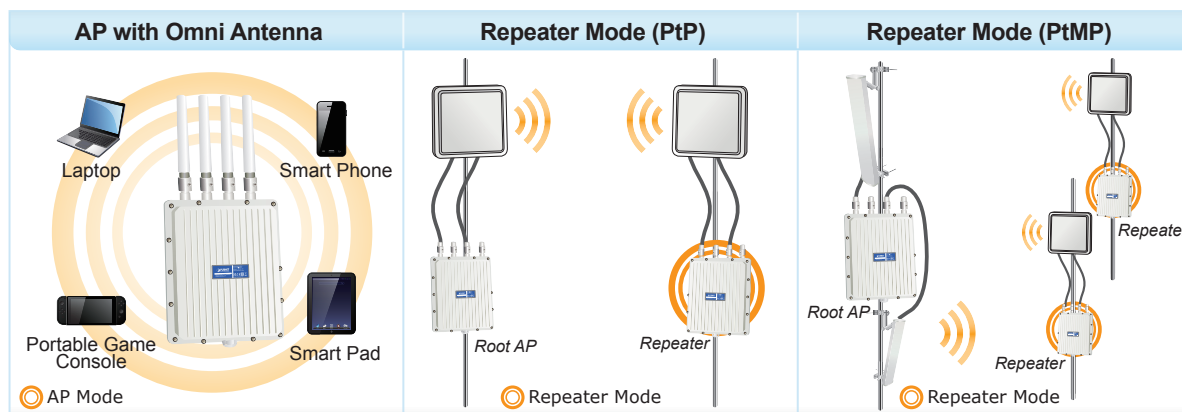
We recommend you to match the **WDAP-1800AX with our related products to get the best results.

Specifications

Product	WDAP-1800AX
Hardware	
Interface	PoE WAN: 1 x 10/100/1000BASE-T, auto-MDI/MDIX, 802.3at PoE In
Antenna	Built-in four N-type connectors
Button	Reset button (Press over 5 seconds to reset the device to factory default)
Dimensions (W x D x H)	231 x 80 x 295 mm
Weight	2.5kg
Material	Aluminum
Power Requirement	48V 0.5A, IEEE 802.3at PoE+
Power Consumption (max.)	< 15W
Mounting Type	Mast mounting
IP Level	IP67
ESD Protection	±8kV air gap discharge ±4kV contact discharge
Surge Protection	±20kV
Wireless Interface Specifications	
Standard Support WDAP-C1800AX(V2)	IEEE 802.11ax IEEE 802.11ac IEEE 802.11n IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control IEEE 802.11k, 802.11v, and 802.11r
Media Access Control	CSMA/CA

Date Modulation	802.11ax: MIMO-OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM, 1024QAM) 802.11ac: MIMO-OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11b: DSSS (DBPSK / DQPSK / CCK)
Band Mode	2.4GHz / 5GHz concurrent mode

Frequency Band	**2.4GHz:**
	  FCC: 2.412~2.462GHz
	  ETSI: 2.412~2.472GHz
	5GHz:
	  FCC: 5.180~5.240GHz, 5.745~5.825GHz
	  ETSI: 5.180~5.700GHz

Operating Channels	ETSI: 2.4GHz: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (13 Channels) 5GHz: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120,124,128,132, 136, 140 (19 Channels) FCC: 2.4GHz: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 (11 Channels) 5GHz: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116,120,124,128,132, 136, 140, 149, 153, 157,161,165 (24 Channels) **5GHz channel list may vary in different countries depending on their regulations**
Max. Transmit Power (dBm)	FCC: up to 20 ± 1dBm ETSI: < 19dBm (EIRP)

Receiver Sensitivity (dBm)	Network Mode	Data Rate	Receive Sensitivity (dBm)
	2.4GHz		
	802.11b	1Mbps	-92
		11Mbps	-85
	802.11g	6Mbps	-90
		54Mbps	-72
	802.11n HT20	MCS0	-88
		MCS7	-70
	802.11n HT40	MCS0	-86
		MCS7	-68
	802.11ax HT20	MCS0	-85
		MCS11	-60
	802.11ax HT40	MCS0	-85
		MCS11	-56
	5GHz		
	802.11a	6Mbps	-92
		54Mbps	-72
	802.11n HT20	MCS0	-90
		MCS7	-70
	802.11n HT40	MCS0	-88
		MCS7	-68
	802.11ac HT20	MCS0	-90
		MCS7	-70
	802.11ac HT40	MCS0	-88
		MCS7	-68
	802.11ac HT80	MCS0	-85
		MCS9	-58
	802.11ax HT20	MCS0	-88
		MCS11	-62
	802.11ax HT40	MCS0	-86
		MCS11	-58
	802.11ax HT80	MCS0	-84
		MCS11	-55

Wireless Interface Specifications

LAN	Static IP / *DHCP Client
WAN	■ Static IP ■ Dynamic IP ■ PPPoE/PPTP/L2TP
Wireless Modes	Access Point Gateway Repeater

Channel Width	20MHz, 40MHz, 80MHz
Encryption Type	WPA3 Personal,WPA2/WPA3 Personal, WPA2 Personal (AES), WPA2 Personal (TKIP),WPA2 Personal (TKIP+AES),WPA/WPA2 Personal (AES) ,WPA/WPA2 Personal (TKIP) , WPA/WPA2 Personal (TKIP+AES) , WPA2 Enterprise, WPA/WPA2 Enterprise
Wireless Security	Enable/Disable SSID Broadcast Wireless MAC address filtering User Isolation
Max. SSIDs	8 (4 per radio)
Max. Wireless Clients	150 (100 is suggested, depending on usage)
Wireless QoS	Supports Wi-Fi Multimedia (WMM)
Wireless Advanced	Auto Channel Selection 5-level Transmit Power Control Max (100%), Efficient (75%), Enhanced (50%), Standard (25%) or Min (15%) Client Limit Control, Coverage Threshold *Wi-Fi channel analysis chart Seamless Roaming Beamforming BSS Coloring
Status Monitoring	Device status, wireless client List PLANET Smart Discovery *DHCP client table System Log supports remote syslog server
VLAN	*IEEE 802.1Q VLAN (VID: 1~4094) *SSID-to-VLAN mapping to up to 4 SSIDs
Self-healing	Supports auto reboot settings per day/hour
Management	Remote management through PLANET DDNS/ Easy DDNS Configuration backup and restore Supports UPnP Supports IGMP Proxy Supports PPTP/L2TP/IPSec VPN Pass-through Supports Captive Portal, RADIUS Server/Client
Central Management	Applicable controllers: NMS-500, NMS-1000V, *PLANET CloudViewer App
Remarks [*]: The feature will be supported through firmware/system upgrade.	
Environment & Certification	
Operating Temperature	-40~70 degrees C
Operating Humidity	5~95% (non-condensing)
Storage Temperature	-40 ~ 70 degrees C
Regulatory	CE, RoHS

Ordering Information

WDAP-1800AX	Dual Band 802.11ax 1800Mbps Outdoor Wireless AP

Related Products

WDAP-C1800AX	Dual Band 802.11ax 1800Mbps Ceiling-mount Wireless Access Point
WDRT-1800AX	Dual Band 802.11ax 1800Mbps Wireless Gigabit Router
WDAP-850AC	Dual Band 802.11ac 1200Mbps Wave 2 Outdoor Wireless AP
WBS-512AC	5GHz 802.11ac 900Mbps Outdoor Wireless CPE
BSP-360	Industrial Renewable Power 5-Port Gigabit Managed Switch/Router with 4-Port 802.3at PoE+

Accessories

WL-NM-0.6	0.6 meter N-male (male pin) to N-male (male pin) Cable
ANT-OM5D-KIT	2.4G/5GHz Dual Band Omni-directional Antenna
ANT-OM8	2.4GHz 8dBi Omni-directional Antenna
ANT-OM10A	5GHz 10dBi Omni-directional Antenna
ANT-OM15	2.4GHz 15dBi Omni-directional Antenna
ANT-SE17D	2x2 MIMO 2.4GHz 17dBi Sector Antenna
ANT-SE17AD	2x2 MIMO 5GHz 17dBi Sector Antenna
ANT-FP14D	2x2 MIMO 2.4GHz 14dBi Flat Panel Dual Polarization Directional Antenna
ANT-FP14AD	2x2 MIMO 5GHz 14dBi Flat Panel Dual Polarization Directional Antenna
ANT-FP14AD	5GHz 14dBi Flat Panel Dual Polarization Directional Antenna
ANT-FP18	2.4GHz 18dBi Flat Panel Directional Antenna
ANT-FP18A	5GHz 18dBi Flat Panel Directional Antenna
WL-LTNA	2.4/5GHz Lightning Arrester (N-male to N-female)